CHECKOUT & LAUNCH CONTROL SYSTEM

System Level Specification

Kenneth R. Clark - Systems Engineering and Integration
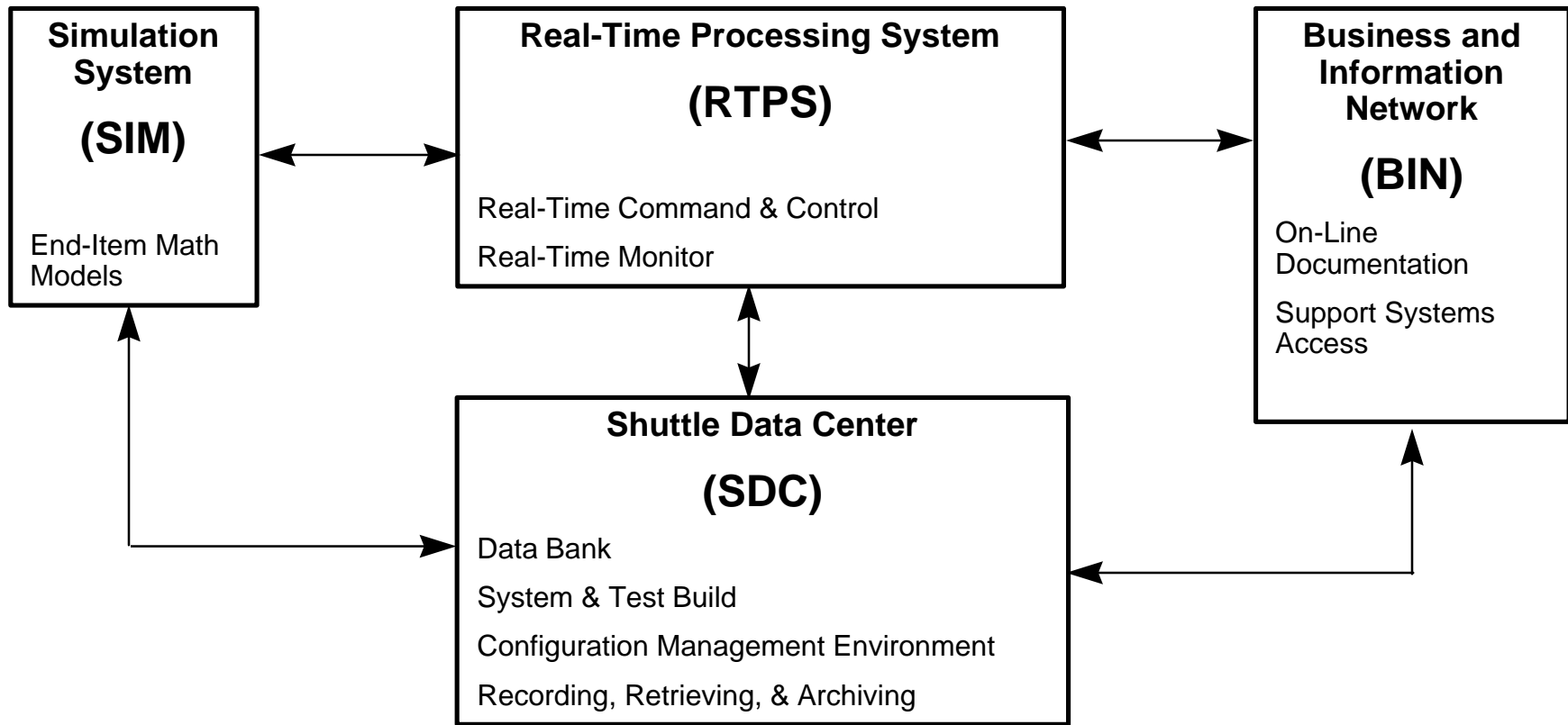## April 23, 1997

SLS Overview

- **Requirements Development began during 60 day effort**
- **Blue Book Requirements used as input to SLS**
- **Create organized, comprehensible, Systems Level Specification (SLS)**
- **Partner SLS with User Community**
- **Reorganized into Major sections**
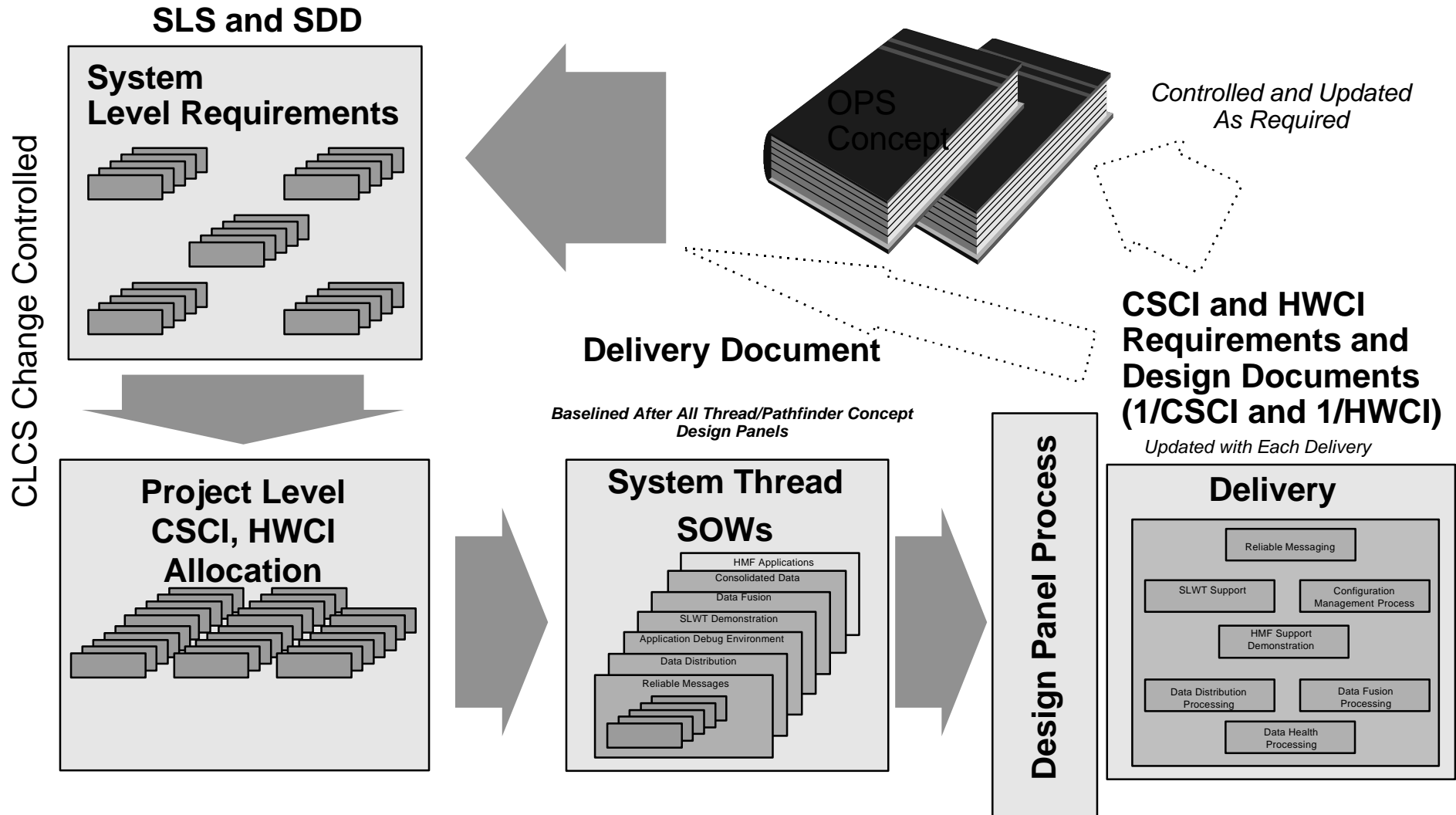- **Written in Specification Language**

CLCS Systems

Simulation System

(SIM)

End-Item Math Models

Real-Time Processing System

(RTPS)

Real-Time Command & Control

Real-Time Monitor

Business and Information Network

(BIN)

On-Line Documentation

Support Systems Access

Shuttle Data Center

(SDC)

Data Bank

System & Test Build

Configuration Management Environment

Recording, Retrieving, & Archiving

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Scope

- **Requirements Vs Design**
- **System Level Vs Product Level**
- **Coverage more complete than Blue Book**

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CLCS System Engineering System and Product Documentation Roles

SLS and SDD

System Level Requirements

Controlled and Updated As Required

OPS Concept

CLCS Change Controlled

CSCI and HWCI Requirements and Design Documents (1/CSCI and 1/HWCI)

Updated with Each Delivery

Delivery Document

Baselined After All Thread/Pathfinder Concept Design Panels

Project Level CSCI, HWCI Allocation

System Thread SOWs

- HMF Applications
- Consolidated Data
- Data Fusion
- SLWT Demonstration
- Application Debug Environment
- Data Distribution
- Reliable Messages

Design Panel Process

Delivery

- Reliable Messaging
- SLWT Support
- Configuration Management Process
- HMF Support Demonstration
- Data Distribution Processing
- Data Fusion Processing
- Data Health Processing

CLCS - External System Interfaces

- Launch Data Bus
- OFI PCM Downlink
- Main Engine PCM Downlink
- PCM Uplink Interface
- Ground Data Bus
- Complex Control Set
- Facility Timing
- Time Management Distribution System
- Hardwire Safing System
- Ground Measurement System
- Pad Meteorological System
- Lightning and Transients Monitoring System
- Hydrogen Umbilical Mass Spectrometer
- Portable Aft Mass Spectrometer
- Backup Hazardous Gas Detection System
- Remote Monitoring Systems

- Orbiter Upgrades
- Space Station/TCMS
- Reconfiguration Network
- Engineering Data Access Management System
- Shuttle Connector Analysis Network
- Shuttle Processing Data Management System
- Kennedy Switched Data Network
- LPS Software Development Network
- Launch Operations Network
- Shuttle Operations Data Network
- CLCS Data Exchange
- Marshal Space Flight Center
- Johnson Space Center
- Stennis Space Center
- Dryden Flight Research Center
- Payload Operations Control Center

Real Time Processing System

- **Critical Functions**
- **Performance**
- **Measurement and Command Processing**
- **Miscellaneous System Services and System Applications**
- **System Support for User Applications**
- **User Applications (TBD)**
- **Safing and Biomed**
- **System Environment**
- **System Control**
- **RTPS Recording & Retrieval**
- **Reliability, Maintainability, and Availability**
- **Human Factors**
- **Safety and Security**
- **Design and Construction**

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BIN, SDC, & Simulation System

Business Information Network

- **Business Information Network General**

Shuttle Data Center

- **Shuttle Data Center General**
- **Test Build**
- **System Build**
- **CLCS Configuration Management Environment**
- **Recording**
- **Retrieving**
- **Archiving**

Simulation System

- **Simulation System General**
- **Simulation Connectivity**

Other Sections

- **Problem Requirements**

- **Removed Requirements**

- **Glossary**

- **Data Types**

- **Keyboard Command Portability Matrix**

- **Acronyms**

Where to From Here

4/16/97 - 4/30/97	**Review SLS & Submit RIDs**
4/23/97	**ABR**
5/05/97 - 5/09/97	**Disposition of RIDs**
5/14/97	**RID Review Mtg. (If Required)**
5/14/97 - 5/21/97	**Incorporate Accepted RIDs**
5/23/97	**Release Approved System Level Specification**

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